Computer-Aided Drafting II

Course Description

      This course examines dimensioning, blocks and attributes, section views, external references, multiview layouts, an introduction to three-dimensional drawing, external commands, scripts, and slide shows. Students will learn how to use AutoCAD to dimension drawings, create section lines and graphic patterns, design symbols and attributes for multiple use, and make basic 3D drawings. Student drawings will be plotted or printed. This course also covers recommended drafting standards and practices for students to use for properly preparing drawings with AutoCAD.

Objectives

After completing this course, the student will be able to do the following:

- Properly dimension drawings and use dimension styles.
- Draw section views and graphic designs using AutoCAD's hatch patterns.
- Construct blocks with attributes and use them in a drawing.
- Create a bill of materials.
- Use external references and create multiview layouts.
- Create, modify, and archive sheet sets.
- Make isometric drawings.
- Make 3D drawings.
- Use external commands and create scripts and slide shows.
- Use proper drafting standards and practices.

Course Length

72 term or semester hours (recommended minimum).

Prerequisite

Computer-Aided Drafting I or prior experience.

Academic Dishonesty

A student who submits the work of another student as her/his own or deliberately fails to properly credit words or ideas borrowed from another source is guilty of plagiarism. A student who uses notes without permission, takes an exam for another student, copies answers from another student's exam, copies drawings in any manner, or engages in any other similar conduct aimed at making false representation with respect to a student's academic performance is guilty of cheating.

Appropriate Use of Electronic Information Resources

Users shall be responsible for messages they transmit through the Internet and shall obey the acceptable use policies of the Internet and any rules of discussion forums in which they participate. Fraudulent, harassing, or obscene messages and/or materials as defined by contemporary court decisions are not to be sent or stored.

Required Text

AutoCAD and its Applications—Basics, Chapters 17–28.

Required Materials

Removable storage media, such as diskettes, Zip disks, or CD-RWs.

Course Outline

Session	Topics and Commands
1	Chapter 17. Basic dimensioning, dimensioning practices and standards, alternate dimensioning practices, arrowless dimensioning, creating thread notes and dimensioning for manufacturing processes, dimension variables, units, decimal places, text size and style, symbols, creating dimension layers, and creating and using dimension styles.
	Commands: DIMLINEAR, **DIMALIGNED, DIMANGULAR**, **QDIM**, **DIMCENTER**, **DIMRADIUS**, **DIMDIAMETER**, **QLEADER**, **DIMORDINATE**, **DIMSTYLE, DIMOVERRIDE**.
	Resources: Chapter 17 exercises, test, and problems.
2	Chapter 18. Editing dimensions, changing dimension styles, importing existing dimension styles, and editing objects with associative dimensions. Updating and overriding existing dimensions.
	Commands: DDEDIT, **QDIM**, **DIMTEDIT**, **DIMEDIT.**
	Resources: Chapter 18 exercises, test, and problems.

Session	Topics and Commands
3	Chapter 19. Defining and using dimensioning and tolerancing terminology, and preparing drawings with tolerance dimensions.
	Commands: DDIM.
	Resources: Chapter 19 exercises, test, and problems.
4	Chapter 20. Geometric dimensioning and tolerancing (GD&T). Using the **Geometric Tolerance** dialog box and the **Symbol** image tile menu to create GD&T drawings.
	Commands: TOLERANCE, **QLEADER**, **LEADER**.
	Resources: Chapter 20 exercises, test, and problems.
5	Chapter 21. Drawing section views and hatch patterns and editing hatch patterns. Using tool palettes to insert hatch patterns.
	Commands: BHATCH, **TOOLPALETTES, HATCHEDIT**, **SOLID**.
	Resources: Chapter 21 exercises, test, and problems.
6	Chapter 22. Creating and editing symbols for multiple use, creating a symbol library, inserting entire drawings, using tool palettes to insert blocks, and editing blocks in place. Using and customizing tool palettes.
	Commands: BLOCK, **INSERT**, **MINSERT**, **BASE**, **TOOLPALETTES, REFEDIT**, **EXPLODE**, **WBLOCK**, **RENAME**, **PURGE**.
	Resources: Chapter 22 exercises, test, and problems.
7	Chapter 23. Assigning attributes, inserting blocks with attributes, editing attributes, collecting attribute information, generating bills of material, and redefining attributes.
	Commands: ATTDEF, **ATTDISP**, **EATTEDIT**, **–ATTEDIT**, **BATTMAN**, **ATTREDEF**, **EATTEXT**.
	Resources: Chapter 23 exercises, test, and problems.
8	Chapter 24. Referencing drawings, binding xrefs and dependent objects, and using xrefs to create multiview layouts.
	Commands: XREF, **XCLIP**, **XBIND**, **XOPEN**, **VPCLIP**.
	Resources: Chapter 24 exercises, test, and problems.
9	Chapter 25. Introduction to the **Sheet Set Manager**, creating, working with, and publishing sheet sets, working with sheets, sheet views, sheet list tables, archiving sheet sets.
	Commands: SHEETSET, **ARCHIVE**.
	Resources: Chapter 25 exercises, test, and problems.

Session	Topics and Commands
10	Chapter 26. Isometric drawing, creating isometric text, isometric dimensioning, and oblique dimensioning. **Commands: ISOPLANE**, **ELLIPSE**. **Resources:** Chapter 26 exercises, test, and problems.
11	Chapter 27. Introduction to 3D drawing, understanding the nature and function of rectangular 3D coordinate systems, visualizing 3D drawings, creating wireframe 3D shapes, and displaying 3D objects. **Commands: UCSICON**, **PLAN**, **3DORBIT**, **VPOINT**, **3D**, **HIDE**. **Resources:** Chapter 27 exercises, test, and problems.
12	Chapter 28. Optional coverage: Using external commands, customizing the acad.pgp file, and creating script files and slide shows. **Commands: REINIT**, **SCRIPT**, **MSLIDE**, **VSLIDE**, **SLIDELIB**. **Resources:** Chapter 28 exercises, test, and problems.
Final exam	The Computer-Aided Drafting II final exam is provided on this Instructor's CD. It can be accessed by returning to the Instructor's CD main menu, selecting the Instructor's Resources option, and then selecting the Final Exams and Answers option on the following menu page.